

### ABSTRACT OF THE DISCLOSURE

In a method for manufacturing a semiconductor device, a first silicon oxide film is formed on a semiconductor substrate. The first silicon oxide film is nitrided so that silicon oxynitride forms at an interface between the semiconductor substrate and the first silicon oxide film. The first silicon oxide film is removed from a portion of the semiconductor substrate using a chemical containing at least an ammonia-hydrogen peroxide solution so that the silicon oxynitride formed at the interface between the portion of the semiconductor substrate and the first silicon oxide film is completely removed. Thereafter, a second silicon oxide film is formed in the portion of the semiconductor substrate from which the first silicon oxide film and the silicon oxynitride have been removed.